

### **REMARKS**

The Examiner is thanked for her careful review of the claims. The claims have been amended as suggested by the Examiner and to provide clarification. No new matter has been added.

### **Information Disclosure Statement**

With the exception of citation No. 6 (equivalent to JP63302929) which the Examiner cited on form 892, copies of the references which the Examiner lined through are provided herewith. Cite no. 5 is equivalent to JP 03/109935.

### **Rejections under 35 USC 112**

The terms "phospholipid component" and "triacylglyceride component" designate the fact that the educt mixture of the claimed process comprises at least one phospholipid compound and at least one triacylglyceride compound. See, for example, page 5, line 15 of the specification. Thus, the term component refers to the fact that the mixture contains at least one compound of each group. In an effort to expedite prosecution the claims have been amended to remove the term "component".

The term "mixture" in the third line of part (b) of claim 1 refer to the mixture formed after the addition of the aqueous solution of the lipase and/or phospholipase.

The "such that" wording necessarily implies that the mixture can only refer to the product obtained after the addition of the aqueous lipase and/or phospholipase solution, i.e. after step b) as the amount of said aqueous solution defines the water content of the resulting mixture.

The mixture in step d) can only refer to the mixture obtained in step c) since step d) follows after step c) and only in step c) does a reaction takes place. Step d) has been amended to clarify that the mixture is from step c).

The term (phospho)lipase covers a lipase, a phospholipase or mixtures thereof and is a conventional and common way of defining such compositions. However, in the interest of furthering prosecution claims 1 and 8 have been amended to recite "lipase, phospholipase or mixtures thereof" . Support for such clarification can be found on page 6 the specification which states:

"it is to be considered as preferred if use is made of a lipase and/or phospholipase... "

Thus, it is respectfully requested that the rejections under 35 USC 112 be withdrawn.

### **Rejections under 35 USC 103**

Claims 1-10, 12, 13, 16 and 19 stand rejected under 35 U.S.C. 103(as allegedly being unpatentable over Yoshitomi et al. (JP 63302929) in view of Tweddell et al. (1997).

Claims 1-10, 12, 13, 16, 17 and 19 stand rejected under 35 U.S.C. 103 as allegedly being unpatentable over Yoshitomi et al. (JP 63302929) in view of Tweddell et al. (1997), as applied to claims 1-10,12,13,16 and 19, in further view of Oester et al. (US 5,591,615)and Yagi et al. (JP 363042691; Derwent abstract).

Claims 1-13, 16, 18 and 19 stand rejected under 35 U.S.C. 103 as allegedly being unpatentable over Yoshitomi et al. (JP 63302929) in view of Tweddell et al. (1997), as applied to claims 1-10, 12, 13, 16 and 19, in further view of Muhlebach et al. (US 6,410,480) and Muller et al. (US 20040006096).

All of the rejections are based upon the combination of Yoshitomi et al (JP 63302929) with Twedell et al. (1997). As noted on page 8 of the Office Action at lines 5-6, Yoshitomi et al. does not teach 3 to 15 % by weight water for the reaction.

Yoshitomi et al. provides two specific examples. See, for example, the translation on pages 6-7. However, the first example has a water content of 90 % and the second example shows a water content of 80% which is in both cases are considerably higher than the claimed range of the present invention. There is no suggestion or guidance whatsoever in Yoshitomi to significantly lower the water content. To cure the deficiency of Yoshitomi et al, the Examiner relies upon Twedell. However, Figure 1 of Twedell et al. shows the conversion rate of the esterification reaction of oleic acid with ethanol with lipase as a function of the water content of the reaction mixture. The process of the instant invention as well as the process disclosed in Yoshitomi does not refer to an esterification process but to the reverse reaction, namely the saponification of esters. Lysolecithines are obtained by the hydrolysis of one ester group of lecithines and mono- and diacylglycerides are the reaction products obtained through hydrolysis of ester groups of triacylglycerides. Twedell et al. in the left column of page 939 actually refers to these two reactions which can be catalyzed by lipases dependent on the reaction medium. As Twedell states on line 9 in the left column on page 939:

"Lipases are generally used either in aqueous media or low water activity media such as organic solvents. In an aqueous medium with an emulsified triacylglycerol substrate, the hydrolysis is the dominant reaction; however, in organic media, synthesis reaction such as esterification and interesterification can become predominant"

Thus, Twedell et al. provides a contrast between an aqueous media or low water activity media such as an organic solvent. Twedell et.al clearly directs a skilled worker to use aqueous solutions (with a high water content) if she/he aims for hydrolysis. Moreover, Figure 1 of Twedell et al. shows that the esterification reaction proceeds more effectively at low water contents. This implies that the hydrolysis reaction (which is the reverse reaction of esterification) is less efficient.

Twedell et al. teaches the opposite of the present invention. The combination of Yoshitomi et al with Twedell et al. does not teach or suggest the process of the present invention.

Oester et al. is relied upon for teaching that lipase from *Aspergillus niger*

splits the ester bonds of Triglycerides. Yagi et al. is relied upon for teaching that lipase belonging to the *Aspergillus* genus such as *Aspergillus niger* can hydrolyze lecithin to produce lyso-type phospholipids. Mueller and Muhlebach are relied upon for teaching that a reaction product can be washed with hexane and water and then dried in a vacuum at a temperature of 60 degrees C.

However, none of the secondary references (Oester et al., Yagi et al, Muhlebach et al. or Muller et al.) cure the deficiencies of Yoshitomi et al. and Twedell et al. They do not teach or suggest a mixture (from step b) having a water content between 3 and 15% by weight.

With regards to claims 4, 5, 8 the references are particularly silent regarding the concentration of the enzyme and the concentration of the reactants.

Based on the comments above it is respectfully requested that the rejections under 35 USC 103 be withdrawn.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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